



GORE® Aerospace Cables and Materials

Engineered to Perform



*Faster Data Transmission
Performance and Reliability
Increased Fuel Efficiency
Process Optimization*

CIVIL AEROSPACE



GORE® Aerospace Cables and Materials



Take off and stay co

Improvements in aerospace technology, increasing demand for travel, expectations for quick and reliable connectivity to devices and in-flight entertainment (IFEC), and increased fuel efficiency are all driving the demand for new and updated aircraft. We are here to collaborate with you to improve your components, systems and aircraft performance.



An aircraft is diverted once every 5 days due to wire and cable failure.

Decreasing the weight of an aircraft by 1 kg can save up to \$3,000 per year in fuel costs.



Ensure Performance and Reliability

Design engineers are integrating sophisticated electronics into almost every system. It is essential for electronic systems to communicate reliably and accurately, and cables are the lifeline of these systems. Mechanical, electrical and environmental stress factors can easily affect cable and material performance such as contaminants, fluids, extreme temperatures, abrasion and vibration. As a result, they need to be more durable and flexible, while maintaining excellent signal integrity to ensure reliable performance.



Increase Fuel Efficiency

One way to improve fuel efficiency is to decrease the weight of an aircraft. For example, an A380-800 contains approximately 470 kilometers (292 miles) of wire and cable weighing a total of 5,700 kilograms (12,566 lbs). Therefore, smaller, lighter weight cable designs that fit into existing spaces are a key component to helping reduce the weight of aircraft and increase fuel efficiency, but without compromising electrical and mechanical integrity.

nnected



Process Optimization

The demand for new aircraft is estimated to increase to more than 30,000 over the next 20 years. Therefore, manufacturers need to optimize production processes and increase aircraft throughput. Supply chains also need to increase their production rate of components, systems and services to meet customer demand.

Faster Data Transmission

Passengers expect constant and reliable access to IFE and conduct business online on their devices without any interruptions or delays while traveling. Also, powerful wireless setups will soon stream content directly to passengers' devices. So, cables need to carry more data or power faster over longer distances, while providing durable protection in harsh conditions.

Installing a Polysulfide/wet sealant on aircraft surfaces involves multiple and additional complex steps.

The number of connected aircraft with in-flight WiFi will more than triple to over 10,400 by 2020.



GORE® Aerospace Cables and Materials

Gore Products Meet the Challenges of

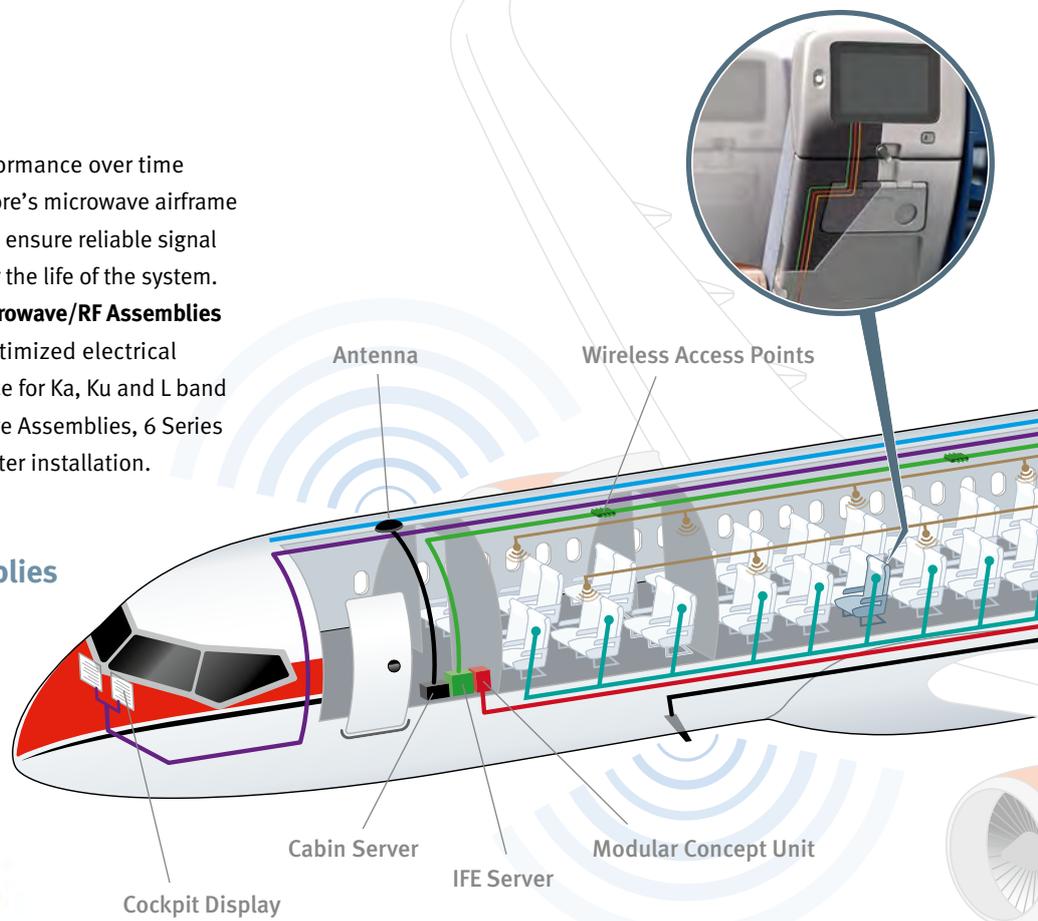
From the cockpit to the tail, GORE® Aerospace Cables and Materials are engineered specifically to maintain signal integrity and protect against exposure from abrasion and wear, repeated mechanical stress, high voltages, broad temperature ranges, and liquid contaminants. Whether you need high-performance cables, in-flight connectivity or aerospace materials for increased aircraft throughput and availability, you can be confident that our products will perform reliably now and over the life of the aircraft.

Proven Performance



When performance over time matters, Gore's microwave airframe assemblies ensure reliable signal integrity for the life of the system. **GORE® Microwave/RF Assemblies** provide optimized electrical performance for Ka, Ku and L band antenna applications. GORE-FLIGHT™ Microwave Assemblies, 6 Series deliver the lowest insertion loss before and after installation.

GORE-FLIGHT™ Microwave Assemblies
GORE® Microwave/RF Assemblies



- GORE® Aerospace Ethernet Cables
- GORE® Aerospace HDMI Cables
- GORE® Aerospace Fiber Optic Cables
- GORE® Aerospace Data Bus Cables

25%

Streaming services replacing hosted content

56%

Passenger demand for connectivity

Today and the Future

High Speed Data

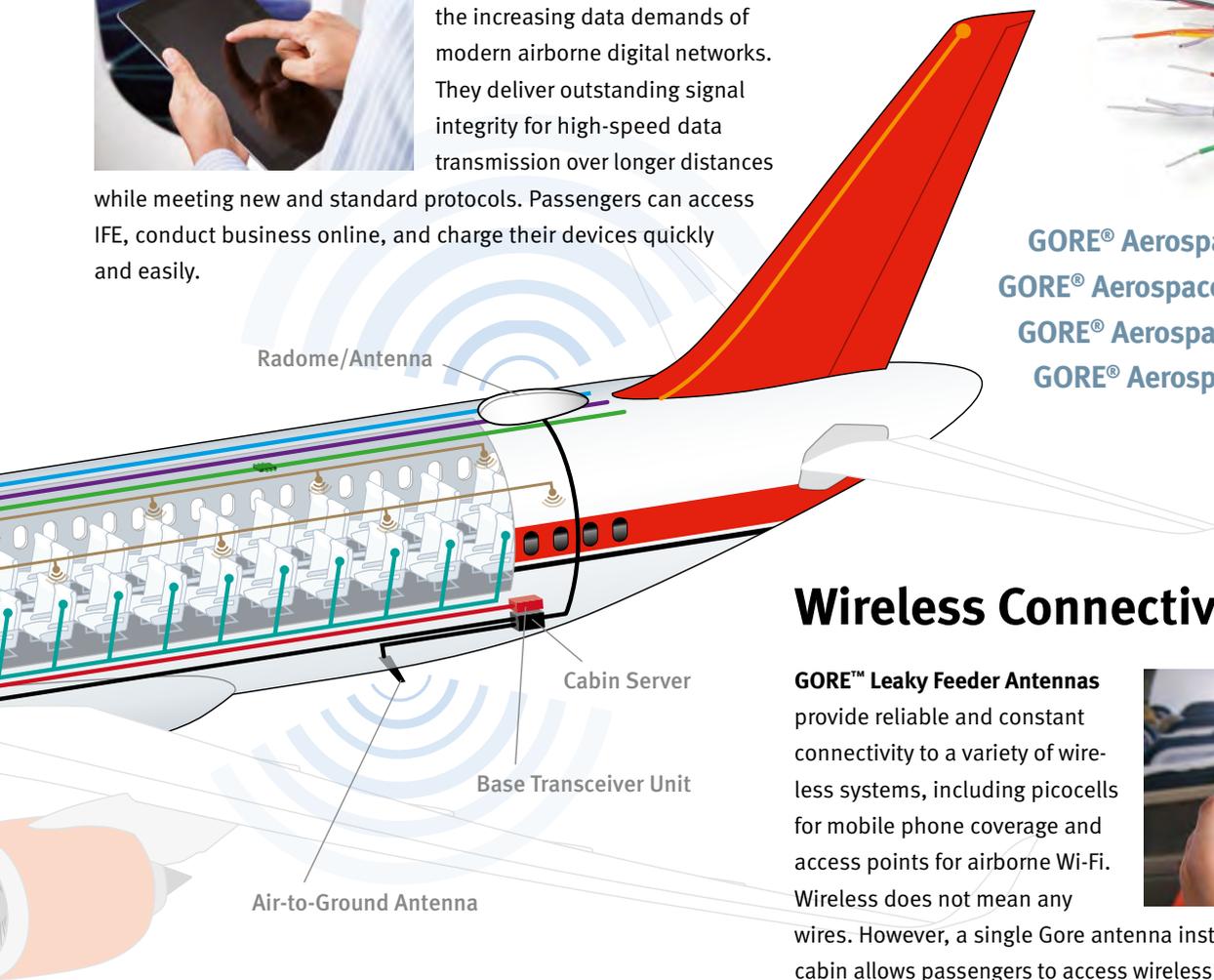


GORE® Aerospace High Speed Data Cables are engineered for the increasing data demands of modern airborne digital networks. They deliver outstanding signal integrity for high-speed data transmission over longer distances

while meeting new and standard protocols. Passengers can access IFE, conduct business online, and charge their devices quickly and easily.



- GORE® Aerospace Ethernet Cables
- GORE® Aerospace Fiber Optic Cables
- GORE® Aerospace HDMI 2.0 Cables
- GORE® Aerospace USB 3.1 Cables



Wireless Connectivity

GORE™ Leaky Feeder Antennas provide reliable and constant connectivity to a variety of wireless systems, including picocells for mobile phone coverage and access points for airborne Wi-Fi.



Wireless does not mean any wires. However, a single Gore antenna installed along the entire cabin allows passengers to access wireless networks for their devices and IFE no matter where they are seated. Less hardware and wires mean less weight and significant fuel savings.

- GORE™ Leaky Feeder Antennas
- GORE® Microwave/RF Assemblies (Types 7M & 5H, 6 Series)
- GORE® Aerospace Seat-to-Seat Cables
- GORE® Aerospace Camera Link™ Cables

GORE™ Leaky Feeder Antennas

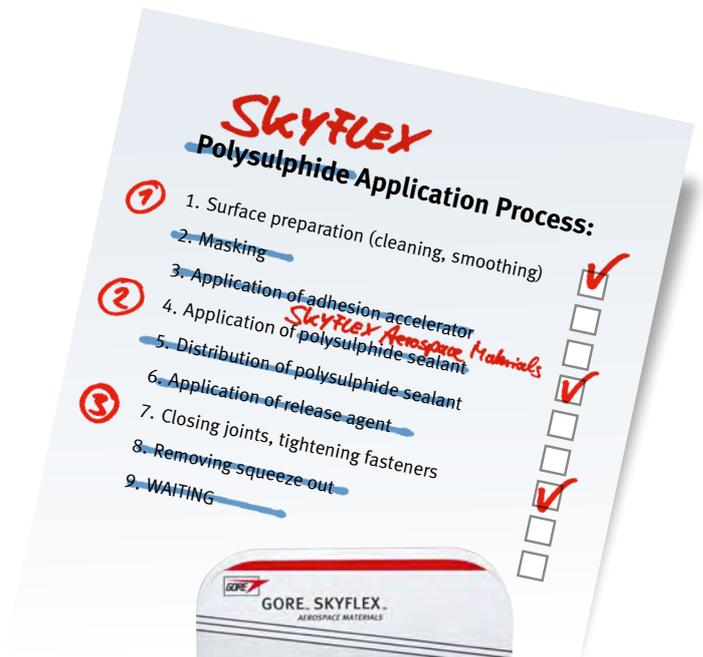


19%

Bring Your Own Device (BYOD) replacing embedded IFE content



GORE® Aerospace Cables and Materials



GORE™ SKYFLEX™
Aerospace Materials

Reliable Sealing and Surface Protection

Proven by more than 20 years of successful applications, **GORE™ SKYFLEX™ Aerospace Materials** are specified by leading civil aircraft OEMs and solve many sealing and surface protection challenges. These lightweight, no-cure tapes and gaskets are often used as an alternative to Form-In-Place (FIP) seals because they simplify aircraft assembly and reduce life-cycle costs with seals that can withstand multiple open-close cycles.



“By using the material supplied by Gore, our production cycle is reduced from 9 to only 3 steps, avoiding the time needed for the pre-assembly of panels and curing.”

Manufacturing Engineer, Aircraft Manufacturer



Innovative Fluoropolymer Technology

Expanded polytetrafluoroethylene, or ePTFE, is the core material in many of Gore's solutions. An ePTFE membrane is created when PTFE – a linear polymer consisting of fluorine and carbon molecules – is expanded, setting the PTFE's molecules into specific formations. Incorporating ePTFE into Gore products gives them the superior performance qualities that customers expect and applications require.

Gore's fluoropolymer technology deliver solutions that are significantly smaller and more lightweight to help reduce the weight of your aircraft and increase fuel efficiency without compromising electrical and mechanical performance. Our products are also highly flexible and easy to install in tight spaces to increase manufacturing throughput and aircraft availability – helping you meet the demand for new and updated aircraft.

- *Biocompatible*
- *Chemically inert*
- *Good weathering properties*
- *Great strength-to-weight ratio*
- *High thermal resistance*
- *Low flammability*
- *Low coefficient of friction*
- *Low dielectric constant*
- *Low water adsorption*
- *Wide temperature range (-180 °C to 260 °C)*

Fit for Use

We deliver products that meet our customers' expectations and perform reliably for the life of their intended application.

Lab Tested

We test on many levels at our world-class, certified laboratories, which reflects our commitment to product integrity.

Flight Proven

Whenever possible, we test and validate our products and your components in real-world conditions.



Our commitment to innovation is based on a thorough understanding of materials and how they interact with their environment.



GORE® Aerospace Cables and Materials

The Gore Advantage

Gore is a technology-driven company focused on discovery and product innovation. Well known for waterproof, breathable GORE-TEX® fabric, the company's portfolio includes everything from high-performance fabrics and implantable medical devices to industrial manufacturing components and aerospace electronics.

Gore has continually developed innovative products in the civil aerospace industry that perform in very harsh conditions, and meet scientific, fitness-for-use and quality testing

Products Engineered for the Aircraft Industry

One of our core values is a concept called fitness-for-use, which means that our products not only do what we say they do, but they also work in environments where other products fail. To meet this commitment, we offer a global engineering and support team to the aerospace industry. We work with you as if we are a member of your design team, helping select the right products to streamline the design process, reduce product size and weight, and increase durability and reliability for long life.

We maintain global testing facilities in which we simulate many operating environments so that we can ensure the reliability of our products in the field. These world-class labs are comprised of three areas of expertise: digital and microwave signal analysis, environmental and stress testing, and electromagnetic compatibility — working together to quantitatively ensure optimal electrical signal integrity for all of our electronic products.

Proven Performance Backed by Gore's Engineering Team

Gore has a proven track record of delivering reliable, long-lasting products for use in the most challenging environments in the aerospace industry, including those experienced by the Apollo 11 lunar module and the more recent Mars Landers. GORE® Aerospace Cables and Materials include cables and assemblies, EMI shielding materials, and aircraft sealants that ensure superior electrical performance and reliability in the most severe environments encountered in the aerospace industry today.



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DIV-0262-BRC-US-OCT16

